

IN THE ABSTRACT

Please replace the present abstract with the following:

ABSTRACT OF THE DISCLOSURE

Compositions, systems and methods are described for condensed phase conversion and growth of nanorods and other materials. ~~A composition includes a plurality of nanorods that define a local volume, said local volume including a fraction, said plurality of nanorods within at least said fraction of said local volume interrelated to define (a) a substantially random distribution of intersection angles between said plurality of nanorods and (b) a localized packing density greater than 50% of a theoretical maximum packing density, which does not account for any voids within said plurality of nanorods.~~ A method includes providing a condensed phase matrix material; and activating the condensed phase matrix material to produce a plurality of nanorods by condensed phase conversion and growth from the condensed phase matrix material instead of from vapor. The compositions are very strong. The ~~systems~~ compositions and methods provide advantages because they allow (1) formation rates of nanostructures necessary for reasonable production rates, and (2) the near net shaped production of component structures.